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NEW YORK, NY 10103-3198				
EXAMINER				
SHEIL ANTHONY H				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/580,124

**Applicant(s)**

HIRTHE ET AL.

**Examiner**

ANTHONY H. SHEH

**Art Unit**

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 16-30 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB/226)  
4) ☐ Interview Summary (PTO-413)  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

### DETAILED ACTION

1. This Office action follows a response filed 3 September 2009. Claims 16-30 are pending. Claims 16, 19, 20, 25 and 30 were amended.
2. Claims 16 and 25 were amended to limit the scope of the Markush claim to overcome prior art rejections; the claims now recite that if the inorganic metal phosphate is  $\text{Ca}_3(\text{PO}_4)\text{Ca}(\text{OH})_2$ , it contains water of crystallization (is hydrated). This amendment finds support in *inter alia* the original claims and changes the scope of the claims in a manner previously not presented. Claims 19, 20 and 30 were amended to correct minor informalties. No new matter has been entered into the claims.
3. Examiner has considered the amendments are arguments set forth by Applicant and has found them unpersuasive. The new grounds of rejection presented below were necessitated by amendment; accordingly, this action is made FINAL.

### ***Claim Objections***

4. Claim 16 is objected to for a minor informality. The new limitations should be amended to correct the subject-verb agreement between the "the inorganic metal phosphate" and the verb "to contain" (i.e. -- the inorganic metal phosphate optionally *contains* --, etc.). Similar revisions should be made wherever necessary to satisfy conventional rules of idiomatic English.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by FABER et al., US 5,489,639 (hereafter '639).

7. Regarding claims 16, 19 and 20, '639 teaches thermoplastic resin compositions comprising cupric hydroxide phosphate as an additive which renders the composition laser markable (Abstract). The cupric hydroxide phosphate is commercially available ingredient from SIGMA-ALDRICH®, cat. no. 344400 (col. 8, In. 50) and has chemical formula  $\text{Cu}_2\text{PO}_4\text{OH}$  (see *Sigma-Aldrich Product Description 344400: Copper(II) hydroxide phosphate*).

8. Regarding claim 17 and 18, embodiments of the '639 composition comprise as thermoplastic resin a polyester resin commercially available from GENERAL-ELECTRIC® under the tradename VALOX® 325C (col. 6, In. 44), which is polybutylene terephthalate (PBT) resin (see *GE Plastics Product Description: VALOX® 325C*).

9. Regarding claims 21 and 22, '639 teaches that the composition should comprise between 0.01 to 5 wt.% of the cupric hydroxide phosphate (col. 2, In. 63-65). The prior art range encompasses/overlaps the claimed ranges.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. The U.S. Supreme Court supplied seven rationales in *KSR International v. Teleflex Inc.* (550 USPQ2d 1385) that, by following the factual inquiries set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966)), establish a *prima facie* case of obviousness. The rationales are:

- (a) Combining prior art elements according to known methods to yield predictable results;
- (b) Simple substitution of one known element for another to obtain predictable results;
- (c) Use of a known technique to improve similar devices, methods, or products in the same way;
- (d) Applying a known technique to a known device, method, or product ready for improvement to yield predictable results;
- (e) "Obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (f) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (g) Some teaching, suggestion, or motivation to combine prior art references that would have led one of ordinary skill to modify the prior reference teachings to arrive at the claimed invention.

13. The Examiner notes that above rationales are merely exemplary. For more information, see MPEP § 2141. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over FABER et al., US 5,489,639 (hereafter '639). The discussion of '639 *supra* in paragraphs 6-9 is incorporated herein by reference.

15. Regarding claims 21 and 22, , '639 teaches that the composition should comprise between 0.01 to 5 wt.% of the cupric hydroxide phosphate (col. 2, ln. 63-65). The prior art range encompasses/overlaps the claimed ranges. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize the '639 inorganic metal phosphate in amounts falling within the claimed range.

16. Regarding claims 23 and 24, the cited claims require that the inorganic metal phosphate satisfy a particular size constraint (Scherrer crystallite size), determined via XRD. '639 discloses several embodiments wherein 90% of particles are smaller than 30 microns, 15 microns, and 6 microns (Table B. Copper Phosphate - col. 7). Therefore, it is reasonable to conclude that the inorganic metal phosphate of '639 satisfies the claimed limitation. Since the United States Patent and Trademark Office cannot perform experiments, the burden is shifted to Applicants to establish an unobvious difference. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

17. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over WALSH, EP 0604074 A1 (hereafter '074), in view of ARAMAKI et al., US 6,506,826 B1 (hereafter '826), in further view of HUND et al., US 4,153,465 (hereafter '465).

18. The basis of this rejection was adequately set forth in the previous Office action mailed 3 March 2009 (see paragraphs 6-25). To clarify the previous grounds of rejection '826 does teach a compound having formula  $A_{10-z}(HPO_4)_z(PO_4)_{6-z}(X)_{2-z} \cdot nH_2O$  wherein  $z$  is from 0 to 2,  $n$  is from 0 to 16,  $A$  represents a metal element and  $X$  represents an anion (col. 2, ln. 38-42). Accordingly, wherein  $z = 0$ , the compound is  $A_{10}(PO_4)_6(X)_2 \cdot nH_2O$ , wherein  $A$  is *inter alia* calcium and  $X$  is hydroxide (col. 5, ln. 42-50) representing  $Ca_{10}(PO_4)_6(OH)_2 \cdot nH_2O$  which is within the scope of cited claims.

19. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over WALSH, EP 0604074 A1 (hereafter '074), in view of ARAMAKI et al., US 6,506,826 B1 (hereafter '826), in further view of PENGILLY, US 4,408,004 (hereafter '004).

20. The basis of this rejection was adequately set forth in the previous Office action mailed 3 March 2009 (see paragraphs 26-32). Also, see the clarification in paragraph 17 above.

### ***Response to Arguments***

21. Applicant's arguments filed 3 September 2009 have been fully considered but they are not persuasive. The basis of Applicant's argument is that ARAMAKI et al., US 6,506,826 B1 (hereafter '826) requires the  $HPO_4$  and thus is a different compound than those claimed. This is not the case (see paragraph 17 above).

### ***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

23. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY H. SHEH whose telephone number is (571) 270-7746. The examiner can normally be reached on Mondays through Thursdays, 9:30A-3:30P.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, VASUDEVAN S. JAGANNATHAN can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANTHONY H SHEH/



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Examiner, Art Unit 1796

/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796